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LONG RANGE MISSILE SYSTEMS GROUP

Precision Strike Associaton

April 19-20
2005

Colonel James Geurts, Comma

Long Range Missile Systems Gro

Eglin, AFB

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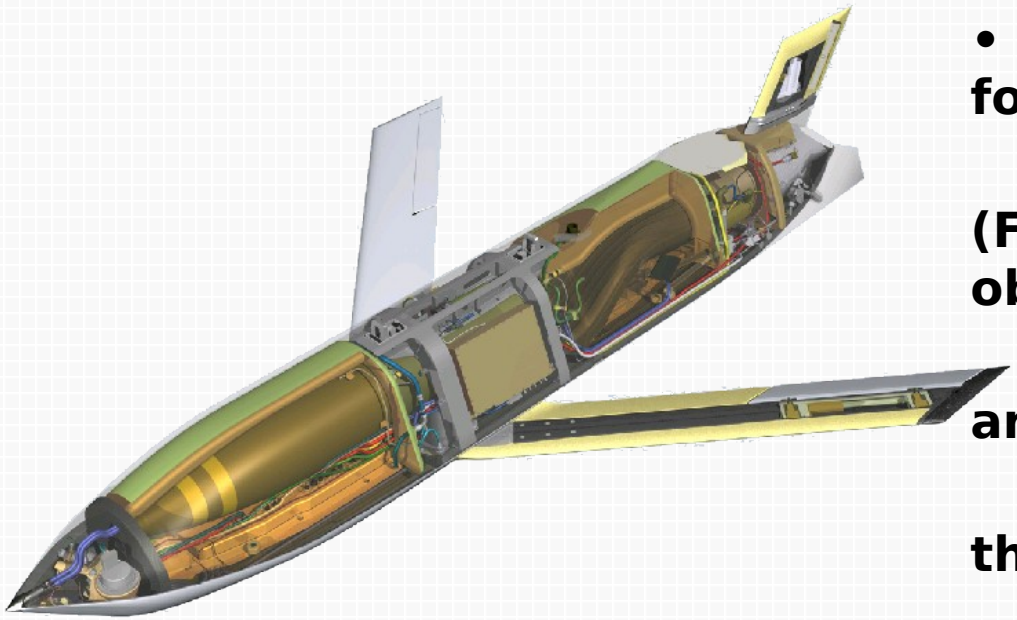
JASSM Topics

- Program Overview
- JASSM Capability Of Today
- JASSM Capability Of The Future
  - JASSM Extended Range (JASSM ER)
  - Electronic Safe and Arm (ESAF)
  - Weapons Data Link (WDL)
  - Maritime Interdiction

What Is JASSM?

- A joint Air Force and Navy Program to provide an autonomous, long range, conventional, air-to-ground, precision missile able to strike highly defended, high value targets



- It fills an urgent requirement for a system that will:
  - Cost less than $400K (FY95$) AUPP objective
  - Take out enemy command and control
  - Survive the advanced threat environment
  - Attack the target autonomously
  - Reduce risk to aircrew
  - Operate in adverse weather
  - Launch from both fighters

System Requirements

Targets

- Air defense sites
- Hardened bunkers
- Large reinforced buildings
- Distributed soft targets
- Bridges
- Other (small hard targets)

System Performance Specification

• Range	>200 NM
• Missile mission effectiveness	Approximately 1 missile/targe
• Time-on-target	±5s
• Off-axis release	180 deg
• Retargeting	In-flight GPS

Aircraft Employment

Platform/Loadou

- F-16C/D 2
- B-52H 12
- B-2 16
- B-1B 24
- F/A-18E/F2
- F-117 2
- F-15E 3
- JSF 2

Carrier Operable

- Insensitive munitions
- Shipboard handling
- CATS & TRAPS
- Naval environment
- Compatible with "yellow gear"

Mission Planning

- AFMSS (MPS and JMPS)
- Uses existing intelligence infrastructure
- < 5 min per route plan
- < 15 min per target

Supportable

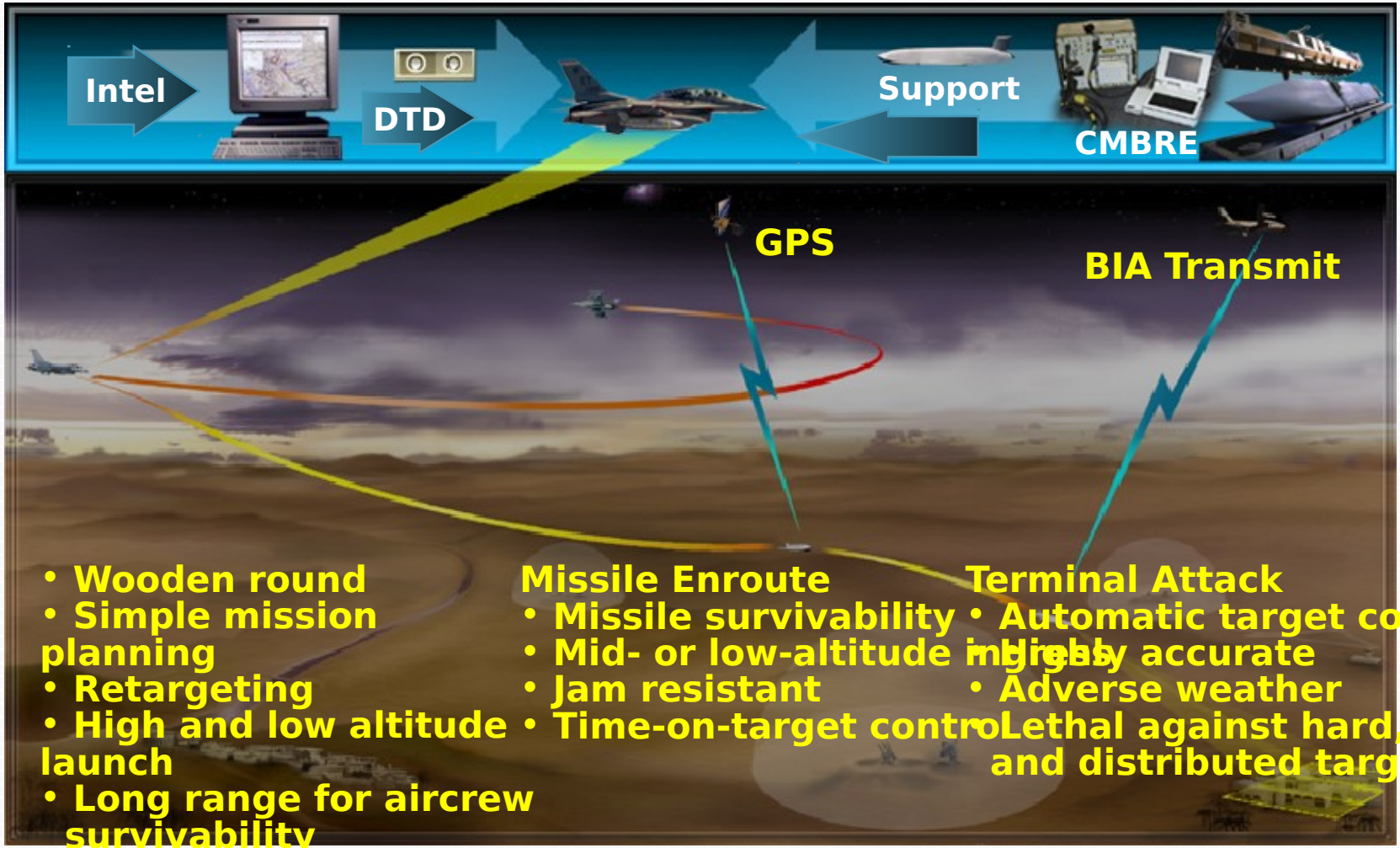
- Complete 15-year warranty
- Wooden round
- Uses existing support equipr
- In-container built-in test
- Load from container
- Stack up to 5 high

Concept of Operation

Mission Planning
- Rear area planning
- Forward area planning

Loading
- From container
- Existing equipment

Storage
- Wooden round
- In container BIT



- Wooden round
- Simple mission planning
- Retargeting
- High and low altitude launch
- Long range for aircrew survivability

Missile Enroute
- Missile survivability
- Mid- or low-altitude mission
- Jam resistant
- Time-on-target control

Terminal Attack
- Automatic target correlation
- Highly accurate
- Adverse weather
- Lethal against hard, soft, and distributed targets

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F-16 Fighting Falcon

B-52 Stratofortress

B-1 Lancer

B-2 Spirit

McChord AFB

Minot AFB

Ellsworth AFB

Whiteman AFB

Dyess AFB

Barksdale AFB

Lackland AFB

PACAF

USAFE

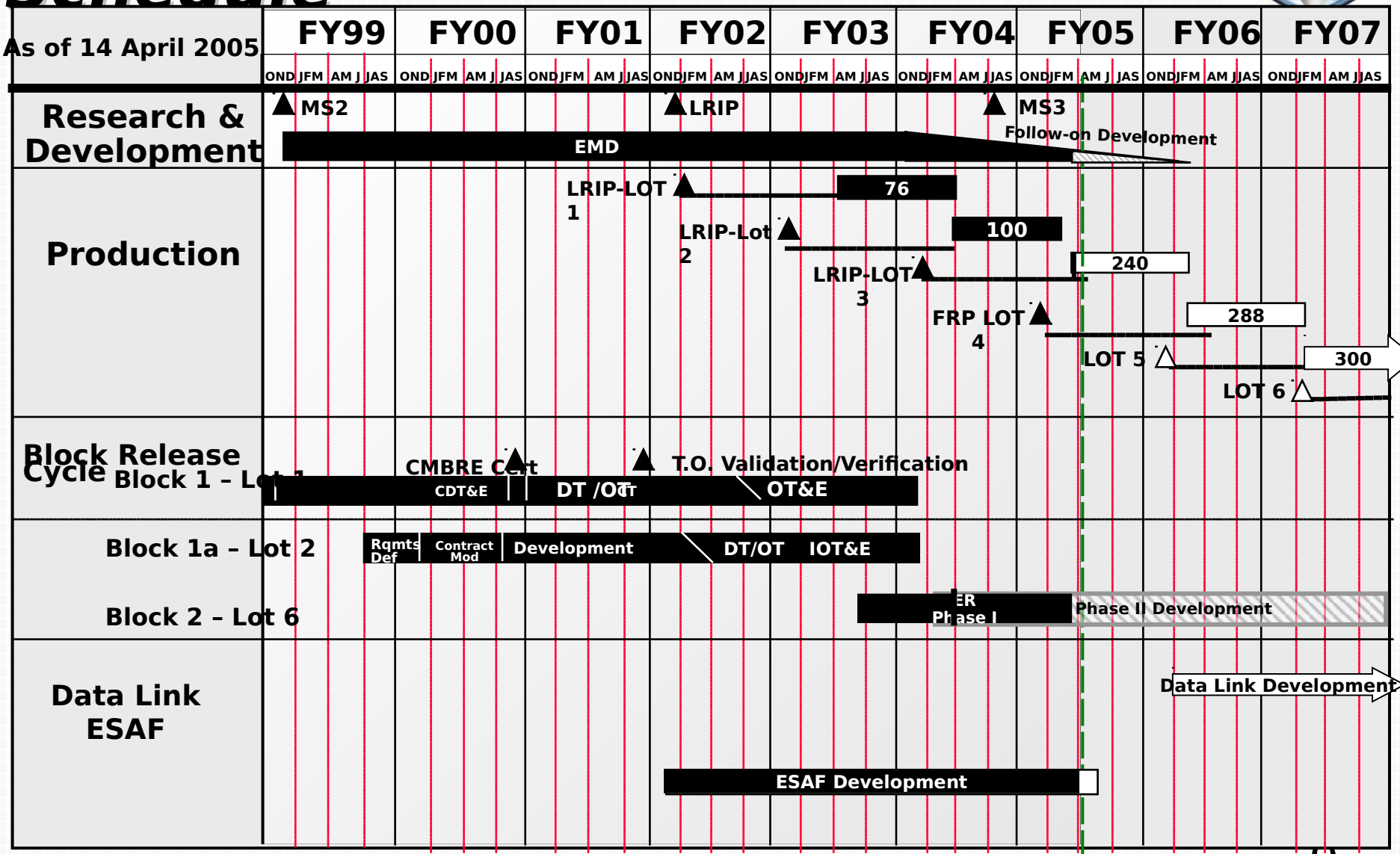
CENTAF
AOR

PACAF

Diego Garcia AFB

Total Delivered To Date = > 190

Top Level JASSM Schedule



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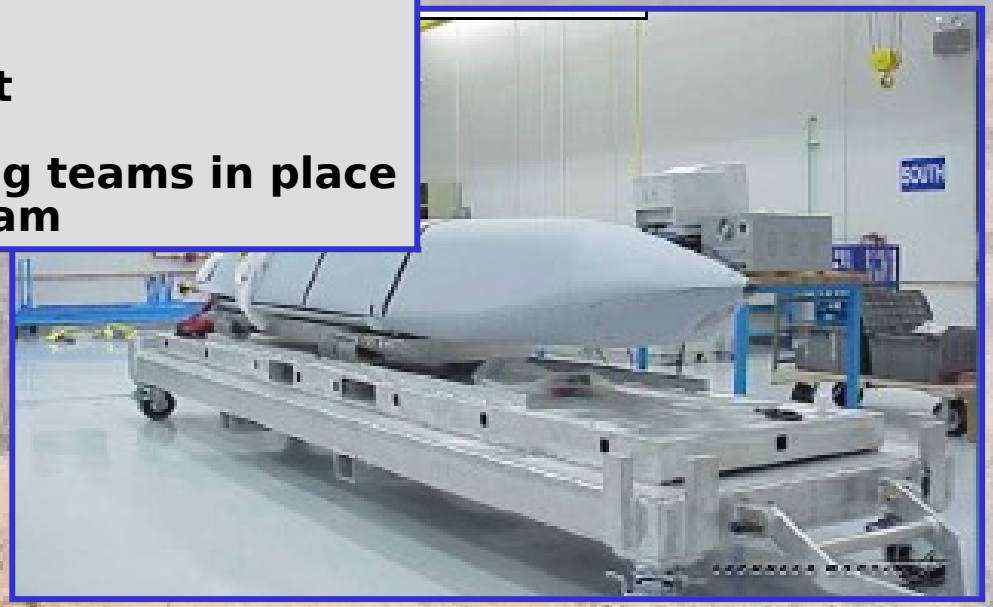
JASSM Facility – Pike County Operations

- Producing JASSM missiles since 1999
- > 290 missiles have been delivered to date
- Facility supports required production rates
- Shingo Prize winner for manufacturing excellenc

Production Line

- Hot Line through 2018
- Economies with USAF procurement
- Online depot capability
- Production and System Engineering teams in place
- Integrated logistics support program



LOCKHEED MARTIN PROPRIETARY INFORMATION
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VT-1 & 2 Test Results

Insensitive Munitions Certification

Fast Cookoff

Slow Cookoff

Sympathetic detonation

Fragment impact

Bullet impact

NATO Insensitive Munitions Information Centre (NIMIC) Insensitive Munitions Award Citing

"…the most significant advance in Insensitive Munitions (IM) technology in the NIMIC nations over the past two years." The award, named this year for Susan DeMay

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What is JASSM-ER?

This Is A JASSM

- Block 2 upgrade to JASSM
- PROGRAM GOALS
  - Provide same capability as JASSM with >500 nm range
  - Begin production with JASSM Lot 6 (Jan 07)

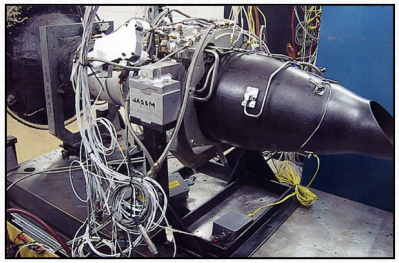
This Is A JASSM-ER

- RESULTING PHILOSOPHY
  - SAME warhead, fuze, interfaces, outer mold line, coatings, mission planning architecture and model, etc. as JASSM
  - Only changes are related to new engine,

JASSM-ER Will More Than Double JASSM Range

JASSM-ER Development Milestones

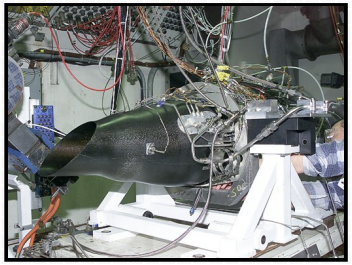
Subscale Wind Tunnel Testing Mar 03



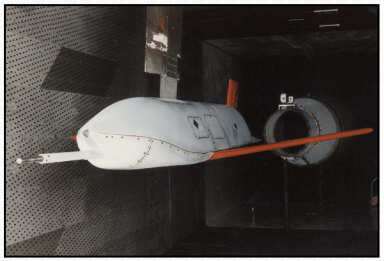
Engine Acceptance Test Dec 04

ER Full-scale Pole Model RCS Test Jan 05

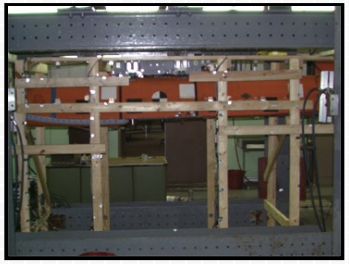
Critical Design Review (CDR) Feb 05



Engine Development Testing Mar-Jun 05

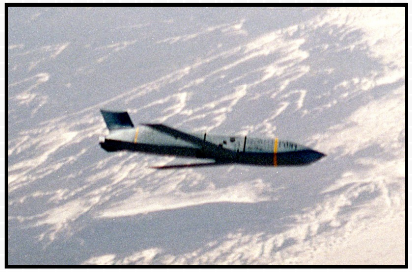


Full-scale Wind Tunnel Testing Jul 05



Structural Testing May-Jun 05

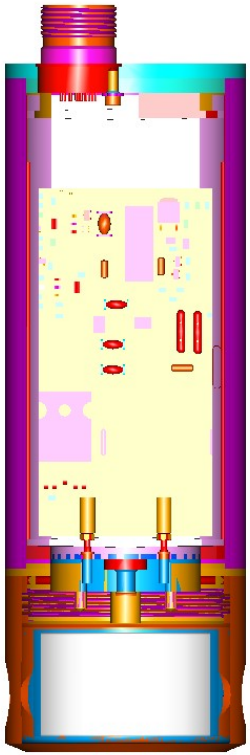
B-1 IMV Flights Sep-Nov 05



First Flight Test Apr 06

Design, qualification, and flight testing of JASSM-ER configuration in time to support Lot 6 insertion

JASSM Electronic Safe and Arm Fuze (ESAF)



Product Upgrade Verification

Objective / Description

- **Electronic In-Line Fuze – No movable parts**
- **Performance requirements same as FMU-156/B**
- **Compatible with Mk94/BLU-109 fuze well**
- **Vented externally to support IM compatibility**

ESAF Development Milestones

Howitzer Testing
October 04

Slow Cook-Off
Testing
December 04

Fast Cook-Off
Testing
December 04

Howitzer Testing
June-August 05

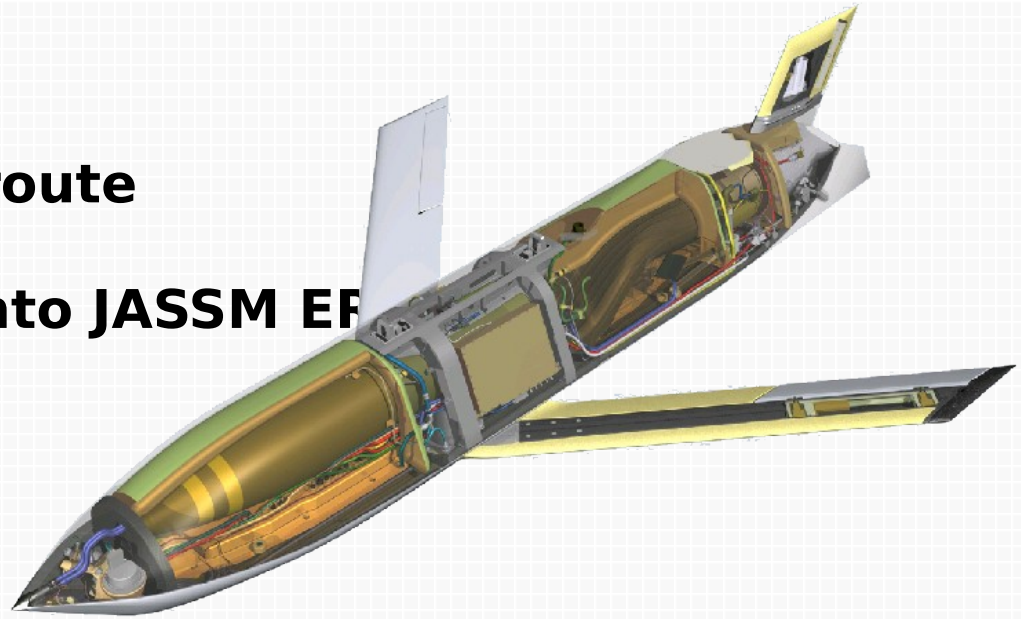
Sled Testing
June-December 05

Flight Testing
October – December
05

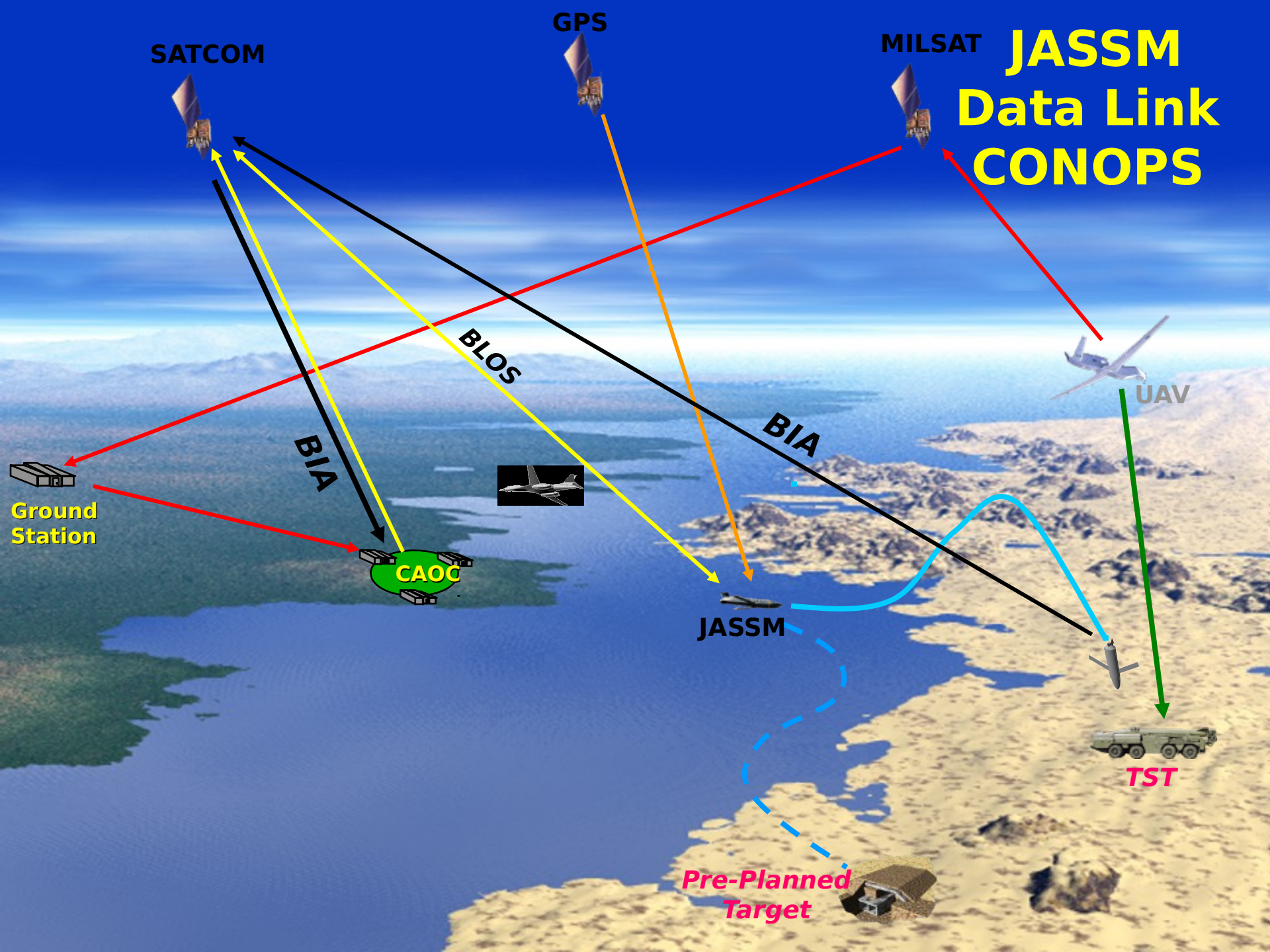
Design, qualification, and flight testing of ESAF in time to support Lot 5 insertion

JASSM Weapons Data Link (WDL)

- Modify JASSM's baseline one way data link into 2 way transreceiver
- Enables retargeting enroute
- Goal is to incorporate into JASSM ER



JASSM ER Provides Increased Flexibility To Warfighter


SATCOM
GPS
MILSAT
JASSM
Data Link
CONOPS
BLOS
BIA
BIA
UAV
Ground
Station
CAOC
JASSM
TST
Pre-Planned
Target

JASSM Maritime Interdiction (MI)

- **JASSM provides warfighter near-term opportunities to enhance MI capability**
  - **Tailored flight profile and seeker algorithms - can be inserted into inventory missiles**
- **Added synergy with data link**
- **ASuW studies completed FY04 through USN funded task**
- **Supporting continued studies and concept refinement with ACC**

JASSM Is Critical Component Of A System-Of-Systems MI Solution

Summary

- **JASSM is in the field and available for warfighter today**
  - **Multiple aircraft can shoot against high value, highly defended targets with unmatched effectiveness**
  - **Upgrades underway to increase already impressive baseline capabilities for JASSM of tomorrow**
  - **By Lot 8, will have 500 nm and range with retargeting inflight**